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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,291

05/17/2007

Ali Ozbek

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2368

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SCHLUMBERGER-DOLL RESEARCH  
ATTN: INTELLECTUAL PROPERTY LAW DEPARTMENT  
P.O. BOX 425045  
CAMBRIDGE, MA 02142

EXAMINER

BUL, BRYAN

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,291	<b>Applicant(s)</b> OZBEK ET AL.	
	<b>Examiner</b> Bryan Bui	<b>Art Unit</b> 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/7/07</u> . | 6) <input type="checkbox"/> Other: ____.  |

### DETAILED ACTION

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim recited "A method of representing a subterranean reservoir.." is not disclosed in the specification. Further, applicant claimed the current U.S. application is an international application number PCT/GB04/005427 under oath and declaration, but the subject matter claimed in claim 17 has not disclosed in the PCT application. The applicants are requested to cancel the claim to avoid the conflict in the application. Therefore, the claim 17 is not mentioned in the prior art rejection below.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 is rejected because the claim invention is not clear to product claim, but it clear to the process of method. Therefore, the claim is rejected under 112, second paragraph (See MPEP 2173.05(p)).

Further, the subject matters of the claims 14 and 16 are identical in Seismic data process that using a filter. The applicants reconstruction the sentences with the same meanings of the claim invention. This is not patentable. And the claims

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could also be rejected under 101 by identical claims in the same application. One of the claims need to be cancelled.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1-16 are rejected under 35 U.S.C. 102(a) as being anticipated by Ozbek, Hoteit and *Dumitru* (3-D Filter Design on a Hexagonal Grid with Applications to Point-receiver Land Acquisition). Herein after called Ozbek et al.

6. With respect to claims 1, 14(16), and 15, Ozbek et al teach a method of determining a digital filter for seismic signals (Summary and Conclusions sections) comprising the steps of: defining constraints representing a filter for preserving signals representing reflection and/or refractions from sub-surface structure and suppressing noise signals in seismic signals (Multidimensional Filter Design using APOCS section in page 1965 and in page 1966, right column “the solution..hexagonal grid”); and using an iterative process with each iteration further comprising the steps of: transforming a filter obtained from a previous iteration into a transform domain; applying in said transform domain first constraints; inverse transforming the filter with the applied constraints into a sample domain; and applying in said sample domain second constraints to obtain an iterated filter (pages 1965-1966, under Multidimensional Filter Design using APOCS and APOC for data acquired on Hexagonal Grid).

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7. With respect to claims 2-13, Ozbek et al teach wherein each step of the iterative process includes the transform of the filter (coefficients) into the wavenumber or frequency-wavenumber domain and the inverse transform back into the spatial or temporal-spatial domain; wherein in each step of the iterative process the filter is constrained to a predefined tolerance in the wavenumber or frequency-wavenumber domain; wherein in each step of the iterative process the filter is constrained to a predefined response outside a finite region in the spatial or temporal-spatial domain. wherein in each step of the iterative process the filter is constrained to a predefined response outside a finite region in the spatial or temporal-spatial domain and in each step of the iterative process the filter is constrained to a predefined tolerance in the wavenumber or frequency-wavenumber domain (pages 1965, 1967); wherein the filter is obtained by applying alternating projection onto constraints defining convex sets of square summable sequences; wherein the transform sampling/periodicity matrix of the transform in Cartesian coordinates is non-diagonal (Multidimensional Filter Design using APOCS section) . Further comprising the step of distributing groups of receivers or single sensor seismic receivers so as to obtain seismic measurements on a staggered or hexagonal grid; wherein the step of transforming comprises the use of a spatially staggered or hexagonal transformation; wherein the step of transforming the signals comprises the use of a spatially staggered or hexagonal Fourier transformation (page 1966); wherein the filter is a zero-phase finite impulse response (FIR) filter, wherein the filter has at least two dimensions, wherein the filter is a 3D filter (page 1965).

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan Bui whose telephone number is 571-272-2271. The examiner can normally be reached on M-TH from 5:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bryan Bui/  
Primary Examiner, Art Unit 2863